

## CLAIMS

What is claims is:

1. A method for use in providing dynamic bit rate encoding, comprising:  
detecting a first available bandwidth;  
5 determining a first encoder bit rate according to the first available bandwidth;  
encoding a signal at the first encoder bit rate;  
detecting a change in the available bandwidth such that there is a second  
available bandwidth;  
determining a second encoder bit rate according to the second available  
10 bandwidth; and  
encoding the signal at the second encoder bit rate.
2. The method of claim 1, wherein the encoding the signal encoded at the  
second encoder bit rate includes encoding a subsequent frame of the signal.  
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3. The method of claim 2, further comprising:  
wirelessly communicating the signal encoded at the first encoder bit rate in  
real-time; and  
wirelessly communicating the signal encoded at the second encoder bit rate in  
20 real-time.
4. The method of claim 3, further comprising:  
receiving a signal quality statistic from a remote receiving device; and  
wherein the detecting the change in the available bandwidth includes detecting  
25 the change based on the signal quality statistic.
5. The method of claim 4, further comprising:  
determining if a signal quality at the receiving device has decreased;  
the detecting the change in the available bandwidth comprises detecting  
30 decrease in available bandwidth; and

the determining the second encoder bit rate comprises decreasing the encoder bit rate such that the second encoder bit rate is less than the first encoder bit rate.

5           6. The method of claim 4, further comprising:  
determining if a signal quality at the receiving device has increased;  
the detecting the change in the available bandwidth comprises detecting an increase in available bandwidth; and  
the determining the second encoder bit rate comprises increasing the encoder bit rate such that the second encoder bit rate is greater than the first encoder bit rate.

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7. The method of claim 3, wherein the detecting the first available bandwidth comprises detecting the first available bandwidth every frame of the signal.

15           8. The method of claim 1, further comprising:  
changing a modulation scheme; and  
the detecting the change in the available bandwidth comprises determining the available bandwidth according to the changed modulation scheme.

20           9. The method of claim 1, further comprising:  
altering a forward error correction; and  
the detecting the change in the available bandwidth comprises determining the available bandwidth according to the altered forward error correction.

25           10. A method for use in providing dynamically varied bit rate encoding, comprising:  
encoding a signal for wireless communication at a first encoding bit rate;  
detecting a first change in an available bandwidth envelope of a communication path;  
determining if the first change in the available bandwidth envelope exceeds a  
30 predefined threshold;

determining an available bandwidth envelope of the first changed available bandwidth envelope;

determining a second encoding bit rate according to the determined available bandwidth envelope that maintains a signal quality when the first change in the available bandwidth envelope exceeds the predefined threshold; and  
5 initiating the encoding of the signal at a subsequent frame with the second bit rate.

11. The method of claim 10, further comprising:

10 determining a maximized bit rate that can be communicated within the determined available bandwidth envelope, and wherein the initiating of the encoding comprises initiating the encoding according to the maximized determined bit rate.

12. The method of claim 10, further comprising:

15 detecting a second change in the available bandwidth envelope;  
determining a second available bandwidth envelope according to the second change in the available bandwidth envelope;  
determining a third encoding bit rate according to the determined second available bandwidth envelope;  
20 encoding the signal at the third encoding bit rate; and  
wirelessly communicating the signal encoded at the third encoding bit rate.

13. The method of claim 12, further comprising:

25 determining once every frame if an adjustment in the encoding bit rate is to be implemented.

14. The method of claim 13, wherein the determining the second encoding bit rate comprises determining the second encoding bit rate such that the second encoding bit rate is less than the first encoding bit rate.

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15. The method of claim 10, further comprising:  
determining if the available bandwidth envelope exceeds a bandwidth  
threshold;  
determining if the available bandwidth during an immediately preceding  
5 frame exceeded the bandwidth threshold; and  
the determining the second encoding bit rate comprises determining the  
second encoding bit rate such that the second encoding bit rate is greater than the first  
encoding bit rate.

10 16. A wireless, multi-media system, comprising:  
a central controller that receives source data and wirelessly distributes at least  
a portion of the source data, where the central controller comprises:  
a dynamic, variable bit rate encoder;  
a transmitter coupled with the dynamic bit rate encoder, wherein the  
15 transmitter transmits the at least the portion of the source data as encoded by the dynamic  
bit rate encoder;  
a control device coupled with the dynamic bit rate encoder, the control  
device determines an available bandwidth according to received statistics and determines  
an encoding bit rate according to the determined available bandwidth; and  
20 the control device instructs the dynamic bit rate encoder to encode at the  
determined encoding bit rate.

17. The system of claim 16, wherein the control device determines the  
available bandwidth and the encoding bit rate once every frame.

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18. The system of claim 16, further comprising:  
a first-in-first-out (FIFO) device coupled with the control device, the dynamic  
bit rate encoder and the transmitter, wherein the FIFO device receives the source data as  
encoded by the dynamic bit rate encoder and forwards the source data as encoded by the  
30 dynamic bit rate encoder to the transmitter; and

the control device monitors a fill level of the FIFO device in determining the encoding bit rate.

19. The method of claim 16, further comprising:

5 a remote device wirelessly coupled with the central controller, wherein the central controller wirelessly distributes the at least the portion of the source data to the remote device encoded at the determined encoding bit rate.

20. The method of claim 19, wherein the central controller further comprises a  
10 receiver coupled with the control device, wherein the receiver receives the encoded source data from the central controller and forwards at least one of the statistics to the control device.